

Customer No.: 31561
Application No.: 10/709,005
Docket NO.: 10938-US-PA

AMENDMENT

Please amend the application as indicated hereafter.

In the Claims :

1. (original) A composition of a nano-tube composite polymer electrolyte, comprising:
 - a polymer substrate having main-chains and side-chains, which at least have an ether group, an acyl group, an amino group, a fluoro group or a Lewis base functional group;
 - a metal salt comprising a metal cation and an anion, wherein the metal salt and the polymer substrate form a polymer salt complex; and
 - a nano-tube modifier forming Lewis acid-base force with the polymer substrate and the polymer salt complex.
2. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein a surface of the nano-tube modifier has functional groups -OR and -O-.
3. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the nano-tube modifier is selected from a group consisting of TiO₂, SiO₂ and Al₂O₃.

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4. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein a diameter of the nano-tube modifier is about from 50 nm to about 160 nm.

5. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein a length/width ratio of the nano-tube modifier is more than 8.

6. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the polymer substrate is about from 30% to about 90% by weight; the metal salt is about from 2% to about 30% by weight; and the nano-tube modifier is about from 3% to about 30% by weight.

7. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the polymer substrate is about from 60% to about 90% by weight; the metal salt is about from 2% to about 50% by weight; and the nano-tube modifier is about from 1% to about 20% by weight.

8. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the Lewis base functional group is selected from a group consisting of oligo(oxyalkylene), flouralkyl group, fluoralkylene, carbonate group, cyano group and sulfonyl group.

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9. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the polymer substrate is selected from a group consisting of polyalkylene oxide, polyvinyl fluoride, polyacrylonitrile, polyester, polyether, polysulfone, polyethylene oxide, polyvinylidene fluoride, poly(methyl methacrylate) (PMMA), polysiloxane, polyphosphazene or derivates thereof.

10. (original) The composition of a nano-tube composite polymer electrolyte of claim 3, wherein a weight-average molecular weight of the polymer substrate is from about 1000 to about 1,000,000.

11. (original) The composition of a nano-tube composite polymer electrolyte of claim 1, wherein the cation is selected from a group consisting of an alkaline-earth metal ion, an alkali metal ion and a transitional metal ion; and the anion is selected from a group consisting of ClO_4^- , $\text{S}_2\text{O}_8^{2-}$, BF_4^- , AsF_6^- , PF_6^- and TeF_6^- .

Claims 12-30 (canceled).